

## STUDIES IN PHILIPPINE DIPTERA, I \*

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An extended series of studies on Philippine Diptera has been made possible by copious material furnished by Professor C. F. Baker, nearly all which has been taken in the vicinity of Los Baños, Laguna Province, Philippine Islands, by Julian Valdez y Hernandez, Professor Baker's Cuban collector.

It seems advisable to preface this series of papers with an enumeration of the species of Diptera hitherto known from the Philippine Islands. In his paper of 1882 Osten Sacken <sup>1</sup> brought together all that was then known of the Diptera of the Islands, and added much to the then scant knowledge of this region. The collection studied by him contained about 250 species, only a few of them described. Formerly this collection was in Turin in the hands of the late Professor L. Bellardi. In the Bellardi collection, now in the University Museum, some of this Philippine material is yet to be found. In the general work of 1895 by Elera <sup>2</sup> nothing is added to the Diptera; and but few species, except in one family, have been added subsequently by Brues, Ricardo, and Speiser. In one family, the Culicidæ, numbers of species have been described by Giles, Ludlow, C. S. Banks, and Knab.

### CATALOGUE OF THE DIPTERA HITHERTO RECORDED FROM THE PHILIPPINE ISLANDS

#### BIBIONIDÆ <sup>3</sup>

*Plecia fulvicollis* Fabr. 1805.

#### TENDIPEDIDÆ (CHIRONOMIDÆ)

*Tendipes trochanteratus* Thoms. 1869. *Pelopia manilensis* Schin. 1868.

\* Proof read by C. F. Baker.

<sup>1</sup> Diptera from the Philippine Islands brought home by Dr. Carl Semper. *Berl. ent. Zeitschr.* (1882), 26, 83-120 and 187-252.

<sup>2</sup> See the account by Dyar, *Journ. N. Y. Ent. Soc.* (1904), 12, 58-59.

<sup>3</sup> Osten Sacken records also an undetermined *Lycoria* (*Sciara*).



- Ochlerotatus (Reedomyia) niveoscutellata* Theob.  
*Ochlerotatus (Pecomomyia) cæca* Theob. 1901.  
*Ochlerotatus (Pseudoskusea) nigritarsis* Ludl. 1908.  
*Ochlerotatus (Duttonia) alboannulis* Ludl. 1911.  
*Mansonioides uniformis* Theob. 1901.  
*Mansonioides chrysogona* Knab. 1909.  
*Mansonioides annulipes* Walk. 1857.  
*Mansonioides annulifera* Theob. 1901.  
*Etorleptomyia luzonensis* Ludl. 1905.  
*Aedomyia catasticta* Knab 1909 (squamnipenna Arrib.).  
*Tæniorhynchus argenteus* Ludl. 1905.  
*Tæniorhynchus lineatopennis* Ludl. 1905.  
*Tæniorhynchus aureosquamatus* Ludl. 1909.  
*Tæniorhynchus ager* Giles 1901.  
*Tæniorhynchus pagei* Ludl. 1910.  
*Chrysoconops aurites* Theob. 1901.  
*Chrysoconops conopus* Frauent. 1867.  
*Culex microannulatus* Theob. 1901.  
*Culex vishnui* Theob. 1908.  
*Culex sitiens* Wied. 1828.  
*Culex impellens* Walk. 1860.  
*Culex ludlowi* Blanch. 1905 (annuliferus Ludl.).  
*Culex alis* Theob. 1903.  
*Culex annulioris* Theob. 1901.  
*Culex hirsutus* Theob. 1901.  
*Culex vagans* Wied. 1828.  
*Culex rubrithorax* Meig. 1850.  
*Culex argentinotus* Banks 1909.  
*Culex taytayensis* Banks 1909.  
*Culex auropunctis* Ludl. 1910.  
*Culex fatigans* Wied. 1828.  
*Culex concolor* Desv. 1825.  
*Culex tigrripes* Grandpr. 1900.  
*Culex fragilis* Ludl. 1903.  
*Culex rizali* Banks 1906.  
*Theobaldiomyia gelida* Theob. 1901.  
*Theobaldiomyia gelida* var. *cuneata* Theob. 1901.  
*Theobaldiomyia whitmorei* Giles 1904.  
*Oculiomyia fulleri* Ludl. 1909.  
*Pardomyia quadripunctis* Ludl. 1910.  
*Hodgesia niveocapitis* Ludl. 1911.  
*Mimomyia (Ludlowia) chamberlainii* Ludl. 1904.  
*Mimomyia (Ludlowia) minima* Ludl. 1907.  
*Uranotænia falcipes* Banks 1906.  
*Uranotænia lateralis* Ludl. 1905.  
*Uranotænia cæruleocephala* Theob. 1901.  
*Uranotænia powelli* Ludl. 1909.  
*Uranotænia ? philippinensis* Giles 1904.  
*Pseudouranotænia parangensis* Ludl. 1908.  
*Pseudouranotænia triangulata* Ludl. 1908.  
*Anisocheleomyia albitarsis* Ludl. 1905.  
*Harpagomyia cæruleovittata* Ludl. 1905.

## SABETHINÆ

- Wyeomyia nepenthicola* Banks.      ? *Dendromyia scintillans* Ludl. 1904.

## CHAOBORINÆ

- Chaoborus manilensis* Schin. 1868.

## TIPULIDÆ

- Dicranomyia saltans* Dol. 1857.      *Tipula pedata* Wied. 1821.  
*Libnotes semperi* O. S. 1882.      *Pachyrrhina luconica* O. S. 1882.  
*Libnotes termitina* O. S. 1882.      *Pachyrrhina ortiva* O. S. 1882.  
*Libnotes familiaris* O. S. 1882.      *Pselliophora suspirans* O. S. 1882.  
*Mongoma tenera* O. S. 1882.      *Pselliophora idalia* O. S. 1882.  
*Eriocera perennis* O. S. 1882.      *Pselliophora doleus* O. S. 1882.  
*Eriocera mansueta* O. S. 1882.      *Scamboneura dotata* O. S. 1882.

## STRATIOMYIDÆ

- |   |  |
|---|--|
| <i>Artemita azurea</i> Gerst. 1857.                             | <i>Musama ? paupera</i> Walk. 1864.              |
| <i>Ptilocera amethystina</i> Vollen. 1857.                      | <i>Nemotelus albiventris</i> Thoms. 1869.        |
| <i>Ptilocera smaragdina</i> Walk. 1849.                         | <i>Eulalia claripennis</i> Thoms. 1869.          |
| <i>Tinda indica</i> Walk. 1851 ( <i>bispinosa</i> Thoms. 1869). | <i>Eulalia ochropa</i> Thoms. 1869. <sup>†</sup> |
| <i>Rosapha bicolor</i> Big. 1877. <sup>‡</sup>                  | <i>Microchrysa flaviventris</i> Wied. 1824       |
| <i>Negritomyia maculipennis</i> Macq. 1849.                     | ( <i>annulipes</i> Thoms. 1869).                 |

## TABANIDÆ

- |   |  |
|---|--|
| <i>Chrysops cincta</i> Big. 1892.       | <i>Tabanus ixion</i> O. S. 1882.                                     |
| <i>Chrysops dispar</i> Fabr. 1798.      | <i>Tabanus vanderwulpi</i> O. S. 1882.                               |
| <i>Chrysops manilensis</i> Schin. 1868. | <i>Tabanus striatus</i> Fabr. 1794 ( <i>manilensis</i> Schin. 1868). |
| <i>Chrysops signifer</i> Walk. 1861.    | <i>Tabanus factiosus</i> Walk. 1860. <sup>‡</sup>                    |
| <i>Chrysozona lunulata</i> Macq. 1867.  | ? <i>Diachlorus flavipennis</i> Macq. 1850.                          |

## RHAGIONIDÆ

- |                                       |   |
|---------------------------------------|---|
| <i>Atherix limbata</i> O. S. 1882.    | <i>Chrysopilus correctus</i> O. S. <sup>‡</sup> |
| <i>Chrysopilus ferruginosus</i> Wied. |   |

## ASILIDÆ

- |   |   |
|---|---|
| <i>Leptogaster princeps</i> O. S. 1882.   | <i>Promachus forcipatus</i> Schin. 1868.            |
| <i>Stichopogon peregrinus</i> O. S. 1882. | <i>Promachus maculosus</i> Macq. 1834.              |
| <i>Damalina cyanella</i> O. S. 1882.      | <i>Promachus manillensis</i> Macq. 1838.            |
| <i>Damalina semperi</i> O. S. 1882.       | <i>Promachus varipes</i> Macq. 1838.                |
| <i>Damalis immeritus</i> O. S. 1882.      | <i>Philodicus integer</i> Macq. 1846.               |
| <i>Damalis vitripennis</i> O. S. 1882.    | <i>Philodicus longipes</i> Schin. 1868.             |
| <i>Damalis nigellus</i> Wulp. 1872.       | <i>Philodicus albispina</i> Thoms. 1869.            |
| <i>Laphria dimidiata</i> Macq. 1846.      | <i>Neoitamus ? longistylus</i> Wied. 1828.          |
| <i>Laphria partita</i> Walk. 1857.        | <i>Ommatius chinensis</i> Fabr. 1794.               |
| <i>Laphria phalaris</i> O. S. 1882.       | <i>Ommatius nanus</i> Walk. 1851.                   |
| <i>Laphria pseudolus</i> O. S. 1882.      | <i>Ommatius retrahens</i> Walk. 1859. <sup>10</sup> |
| <i>Laphria scapularis</i> Wied. 1828.     | <i>Emphysomera aliena</i> O. S. 1882.               |

<sup>‡</sup> The species, *R. habilis* Walk. 1860, was given by Kertész, *Cat. Dipt.* (1908), 3, 8, as from the Philippine Islands, but this error is corrected in *Ann. Mus. nation. Hung.* (1909), 379.

<sup>†</sup> Osten Sacken also records some unnamed species of *Geosargus* and *Ptecticus*.

<sup>‡</sup> Osten Sacken also records 1 *Chrysozona* and 10 undetermined species of *Tabanus*.

<sup>§</sup> Osten Sacken mentions 3 undetermined species of *Chrysopilus*.

<sup>10</sup> Osten Sacken records also undetermined species of *Leptogaster*, *Damalis*, *Maira*, *Laphria* (7), *Promachus* (3), *Ommatius* (6), *Asilus* (12), and *Proctacanthus*. Macquart has erroneously recorded *Microstylum dux* Wied. and *Hoplistomerus serripes* Fabr.

## BOMBYLIDÆ

- Hyperalonia oenomaus* Rond. 1875.      *Hyperalonia umbrifera* Walk. 1849.  
*Hyperalonia flaviventris* Dol. 1857.      *Anthrax distigma* Wied. 1828.<sup>11</sup>

## THEREVIDÆ

- Psilocephala lateralis* Esch. 1822.

## EMPIDIDÆ

- Elaphropeza exul* O. S. 1882.<sup>12</sup>

## DOLICHOPODIDÆ

- Agonosoma vittatum* Wied. 1819.      *Diaphorus aeneus* Dol. 1856.  
*Agonosoma crinicornis* Wied. 1874.      *Diaphorus maurus* O. S. 1882.<sup>13</sup>

## SYRPHIDÆ

- Asarcina aegrota* Fabr. 1805.      *Eristalis plistoanax* Walk. 1849.  
*Asarcina consequens* Walk. 1856.      *Megaspis errans* Fabr. 1787.  
*Baccha pedicellata* Dol. 1856.      *Axona chalcopyga* Wied. 1830.  
*Graptomyza literata* O. S. 1882.      *Tubifera celeber* O. S. 1882.  
*Graptomyza microdon* O. S. 1882.      *Milesia bigoti* O. S. 1882.  
*Eristalis agyrus* Walk. 1849.      *Milesia ritsemæ* O. S. 1882.  
*Eristalis babytace* Walk. 1849.      *Milesia semperi* O. S. 1882.<sup>14</sup>

## PHORIDÆ

- Aphiochaeta banksi* Brues 1909.      *Aphiochaeta curtineura* Brues 1909.<sup>15</sup>

## TACHINIDÆ

- Scopolia spinicosta* Thoms. 1869.      *Stomatorrhina lateralis* Wulp. 1881.  
*Rutilia dubia* Macq. 1843.      *Cosmina prolata* Walk. 1860.  
*Sarcophaga frontalis* Thoms. 1869.      *Phumosia abdominalis* R. D. 1830.  
*Sarcophaga spininervis* Thoms. 1869.      *Lucilia tagaliana* Big. 1877.  
*Sarcophaga brevis* Walk. 1864.      *Lucilia philippinensis* Macq. 1843.  
*Sarcophaga sericeonitens* Walk. 1861.      *Lucilia fortunata* Walk. 1860.  
*Rhynchomyia indica* Rond. 1875.      *Lucilia ditissima* Walk. 1861.  
*Stomatorrhina muscina* Rond. 1875.      *Chrysomya dux* Esch. 1822.<sup>16</sup>

<sup>11</sup> Osten Sacken records a *Hyperalonia* near *Tantulus* and an undetermined *Anthrax*.

<sup>12</sup> Osten Sacken has also a *Noeza* sp.

<sup>13</sup> Osten Sacken records an undetermined *Agonosoma* and a *Diaphorus*.

<sup>14</sup> Osten Sacken records some undetermined species of *Syrphus* (2), *Sphaerophoria*, *Baccha* (2), *Neosseia*, *Graptomyza*, *Eristalis* (3), *Tubifera*, and a *Milesia* near *conspicienda* Walk.

<sup>15</sup> Osten Sacken records an undetermined species of *Phora* and a species of *Dorylas* (*Pipunculus*).

<sup>16</sup> Osten Sacken records also some undetermined species of *Dexia*, *Prosenia*, *Masicera*, *Miltogramma*, etc.

## MUSCIDÆ

- Musca conducens* Walk. 1860.      *Anthomyia manillensis* Frauenf.  
*Musca niveisquama* Thoms. 1869.      1867.  
*Musca bivittata* Thoms. 1869.      *Lispa grandis* Thoms. 1869.<sup>17</sup>  
*Musca favillacea* Walk.      *Coenosia picicrus* Thoms. 1869.

## SCIOMYZIDÆ

- Sepedon javanensis* R. D. 1830.

## CELYPHIDÆ

- Celyphus obtectus* Dalm.      *Celyphus levis* Wulp. 1881.  
*Celyphus scutatus* Wied. 1830.

## LAUXANIIDÆ

- Lauxania latifrons* Thoms. 1869.<sup>18</sup>

## LONCHAEIDÆ

- Lonchaea punctipennis* Walk. 1860.

## ORTALIDÆ

- Scholastes cinctus* Guér. 1830.      *Plagiostenoptera aenea* Wied. 1823.  
*Lamprogaster placida* Walk. 1849.      (*abrupta* Thoms.).  
*Notopsila sexpunctata* O. S. 1882.      *Antineura stolata* O. S. 1882.  
*Notopsila curta* O. S. 1882.      *Antineura sericata* O. S. 1882.  
*Rivellia fusca* Thoms. 1869.      *Philocompus cupidus* O. S. 1882.  
*Pseudepicausta chalybea* Dol. 1859.      *Xenaspis polistes* O. S. 1882.  
*Plagiostenoptera calcarata* Macq. 1843.      *Naupoda platessa* O. S. 1882.<sup>19</sup>  
*Plagiostenoptera trivittata* Walk. 1849.

## TRYPANEIDÆ

- Chaetodacus ferrugineus* Fabr. 1794.      *Ptilona brevicornis* Wulp. 1880.  
*Chaetodacus icarus* O. S. 1882.      *Rioxa lanceolata* Walk. 1857.  
*Adrama determinata* Walk. 1857.      *Rioxa manto* O. S. 1882.  
*Enicoptera proditrix* O. S. 1882.      *Spheniscomyia sexmaculata* Macq. 1843 (*melaleuca* Walk.).  
*Gastrozona cassandra* O. S. 1882.      *Acidia fossata* Fabr. 1805 (*elimia* Walk.).  
*Acanthoneura maculipennis* Westw. 1848.      "Acinia" *stellata* Macq. 1843.<sup>20</sup>  
*Acanthoneura alcestis* O. S. 1882.

## DIOPSIDÆ

- Diopsis subnotata* Westw. 1848.      *Teleopsis selecta* O. S. 1882.  
*Teleopsis belzebuth* Big. 1874.      *Sphyracephala cothurnata* Big. 1874.  
*Teleopsis motatrix* O. S. 1882.

<sup>17</sup> Osten Sacken mentions an undetermined species of *Lispa*.

<sup>18</sup> Osten Sacken records also 10 undetermined species of *Sapromyza*.

<sup>19</sup> Osten Sacken mentions an undetermined *Lamprogaster*.

<sup>20</sup> Osten Sacken records also a *Rioxa* and a *Tephritis*.

## SEPSIDÆ

*Sepsis revocans* Walk 1860.*Sepsis linearis* Walk. 1849.<sup>11</sup>

## TYLIDÆ

- Taenaptera chrysopleura* O. S. 1882. *Eurybata hexopla* O. S. 1882.  
*Taenaptera galbula* O. S. 1882. *Eurybata semilauta* O. S. 1882.  
*Taenaptera nigripes* Wulp. 1881. *Telostylus maccus* O. S. 1882.  
*Taenaptera monedula* O. S. 1882. *Gymnonerius duplicatus* Wied. 1830.  
*Taenaptera coarctata* Walk. 1861. *Gymnonerius fuscus* Wied. 1824.  
*Trepidaria territa* O. S. 1882.

## PSILIDÆ

*Chyliza selecta* O. S. 1882.

## CHLOROPIDÆ

*Chlorops vittipennis* Thoms. 1869. *Gaurax dimorphus* O. S. 1887.

## EPHYDRIDÆ

- Dryxo digna* O. S. 1882. *Discomyza obscurata* Walk. 1860.  
*Dryxo spreta* O. S. 1882. *Ephydra pleuralis* Thoms. 1869.<sup>22</sup>  
*Notiphila sternalis* Thoms. 1869.

## DROSOPHILIDÆ

*Drosophila ananassae* Dol. 1859. *Drosophila hypocausta* O. S. 1882.

## GEOMYZIDÆ

*Cyrtonotum arcuatum* O. S. 1882.

## HIPPOBOSCIDÆ

- Ornithoctona nigricans* Leach (bat- *Myiophthiria reduvioides* Rond. 1878  
*chiana* Walk.). (*capsoides* Rond.).<sup>23</sup>  
*Olfersia nigrita* Speis. 1905.  
 Total, 283 species.

## FIRST CENTURY OF THE BAKER COLLECTION

The types of the new species here described are to be found in the collection of Prof. C. F. Baker, and cotypes, so far as specimens were available, in my collection.

1. *Evaza bipars* Walk. 1857.

A rare species, previously known only from Borneo, New Guinea, and New South Wales.

<sup>11</sup> Osten Sacken has 2 other species determined as *Sepsis testaceus* and *S. basifera*, by Walker.

<sup>22</sup> Osten Sacken records also a *Paralimna* sp.

<sup>23</sup> *Cyclopodia dubia* Westw., recorded by Walker, belongs to some other species.

2. *Ptilocera smaragdina* Walk. 1849.

I think that Osten Sacken's specimens are identical with these.

3. *Rosapha bicolor* Big. 1877.

An endemic and very characteristic species.

4. *Negritomyia maculipennis* Macq. 1849.

A common species, widely spread over the Malayan Archipelago and New Guinea.

5. *Microchrysa flaviventris* Wied. 1824.

Common throughout the whole Oriental Region, and found also in New Guinea.

6. *Solva flavipes* Dol. 1858.

Described from Amboina and recorded also from New Guinea. In our specimens the antennæ are yellow at the base, and the dark abdominal spots are almost fused together, forming a longitudinal stripe.

7. *Solva vittipes* nom. nov. (*vittata* Dol., 1858, not of Walker, 1837.)

Very distinct by the black longitudinal stripe on the underside of the hind femora. The abdomen is sometimes entirely black. The wings are wholly hyaline, not infuscated at the tip; the coxæ, however, are yellow, and the stripe of the femora is complete, differing therefore from the recently described *S. javana* Meij. of Java.

8. *Chrysops signifer* Walk. 1861.

Previously known from Batchian and Borneo.

9. *Tabanus rubidus* Wied. 1821.

Recorded from India, Java, and Sumatra. The single specimen examined shows the pattern of the abdomen as described by Schiner for his *T. manilensis*; but in regard to the form of the frontal callus, I think that Ricardo is right in considering the latter species as synonymous with the following.

10. *Tabanus striatus* Fabr. 1794.

Common over all the Oriental Region. Both sexes are represented in the collection, the males being the more numerous.

11. *Chrysopilus ferruginosus* Wied. 1879.

A common oriental species. Our specimens correspond very well with others formerly received from Formosa.

12. *Chrysopilus correctus* O. S. 1882.

A very distinct endemic species.

13. *Laphria dimidiata* Macq. 1846.

Widely spread over the Malayan Archipelago.

14. *Philodicus longipes* Schin. 1868.

An endemic species. I think it very probable that *Erax integer* Macq., 1846, is the same species.

15. *Ommatius chinensis* Fabr. 1794.

This is *O. fulvidus* of Osten Sacken's paper, a common species in the Oriental Region.

16. *Emphysomera aliena* O. S. 1882.

An endemic species.

17. *Systrophus sphecoides* Walk. 1860.

We have a single specimen which corresponds well enough with the description of this species. Previously known only from Celebes and Macassar.

Thorax entirely black, with a yellow vertical stripe from the humeri to the front coxæ which are black; metasternum distinctly bluish, with many transverse furrows. Front legs almost entirely yellow, only the femora brownish below, and the last tarsal joints dark.

18. *Agonosoma vittatum* Wied. 1819.

A beautiful species, widely spread over the Oriental Region.

19. *Paragus serratus* Fab. 1805.

Common in the Oriental (and also in the Ethiopian) Region, and also known from Formosa.

20. *Melanostoma planifacies* Macq. 1848.

A true *Melanostoma*, very distinct by the form of the face as described by de Meijere. Previously known only from Java. The previously unknown male has the abdomen entirely yellow, with very narrow black lines at the hind margins of the segments; genitalia of greater size, black, placed asymmetrically, the strong yellow penis prominent below. Legs entirely yellow.

21. *Asarcina ægrota* Fabr. 1805.

A common oriental species, known also from Formosa. Sack places it in the genus *Didea*, but it seems better to allow it to remain in the present genus, on account of the form of the oral opening, of the position of the ocelli, and of the presence

of a very distinct thoracic collar. The species is wanting in the synopses given by me in my papers on the genus, but it is easily known from any other by the broad blackish band on the wings.

22. *Syrphus nectarinus* Wied. 1830.

This species is only an oriental variety of the common *S. balteatus* DeG.

23. *Baccha pulchrifrons* Aust. 1893.

A distinct species previously known only from Ceylon and Java.

24. *Baccha purpuricolor* Walk. 1859.

Seems to be a common species. Known before from Key Island and Mysol.

25. *Graptomyza brevisrostris* Wied. 1820.

Formerly known from Java and the Nicobar Islands. A well differentiated species, new for the Philippines.

26. *Megaspis errans* Farb. 1787.

A common species in the Oriental Region.

27. *Syritta orientalis* Macq. 1842.

Formerly known only from India and Java.

28. *Eumerus flavicinctus* Meij.

Described from Java. Easily distinguished by the yellow scutellar margin. It seems to me very probable that *E. figurans* Walk. from Celebes is the same species.

29. *Eumerus bimaculatus* Dol. 1858.

A species described from Amboina, well distinguished by the coloration of the abdomen. The enigmatical *Citibaeus aurata* Walk. from Borneo seems to be an allied form.

30. *Prosenia pectoralis* Walk.

Seems to be a common species. Formerly recorded only from New Guinea.

31. *Stilbomyia fulgida* Big. 1859.

A very fine species, originally from Celebes, and new to the Philippines. From Formosa I have received the allied *S. fuscipennis* Fabr.

32. *Lucilia fortunata* Walk. 1860.

Corresponds very well with the description of the type from Celebes, and is a true *Lucilia*.

33. *Pseudopyrellia lauta* Wied. 1830.

Described from Java and common in the Oriental Region.

34. *Stomoxys calcitrans* L. 1758.

A specimen from the Philippines is identical with others from Europe. Very common.

35. *Lispa pectinipes* Beck.

Our specimens agree with cotypes from Cairo in my collection. Formerly known from Egypt, Canary Islands, and Delagoa Bay. Stein has recorded it also from Java.

36. *Pygophora lobata* Stein. 1900.

Described from Singapore and New Guinea, and recorded from Java. Easily distinguished by the shape of the antennal arista and by the enormous male genitalia. The female is without doubt that described by Stein, and is very different from the male; there are specimens of both sexes in this collection.

37. *Sepedon plumbellus* Wied. 1830.

This is *S. javensis* of Osten Sacken's Enumeration, page 193, a species which, according to Hendel's paper, 1911, is widely spread in the Oriental Region and New Guinea.

38. *Sepedon violaceus* Hendel. 1909.

Described from Hongkong, recorded from Calcutta, and common in Formosa. The present specimens have the tip of the wings distinctly infuscated.

39. *Celyphus levis* Wulp. 1881.

This species has the arista dilated, and is certainly not a *Paracelyphus*. It seems to be variable in the coloring of the body and legs, from black to brownish yellow. The determination for the present is doubtful.

40. *Steganopsis bakeri* sp. nov.

*Male*.—Very near *S. pupicola* Meij. from Java, distinguished by the greater size, the front tarsi being entirely black, and the femora not being yellow at apex.

Length of body, 4 mm.; of antennæ, 1 mm.

A very distinct and interesting species, belonging, without any doubt, to this genus, erected in 1910 by de Meijere. The anterior fronto-orbital bristle is turned forward, as shown in his figure, and not backward as stated in the description.

Head entirely shining black; frons as broad as the eye, with a middle longitudinal furrow and some transverse furrows; face cylindrical, oblique, with very numerous but thin transverse

furrows; prælabrum broad, prominent, shining black; proboscis and palpi black; antennæ very long, brownish yellow near the base, the third joint blackish, very much restricted after the insertion of the arista which is plumose. Thorax shining black, thickly punctulate, very short pilose; pleuræ whitish yellow; chest and sternopleuræ shining black, but the last with a narrow yellow streak on the upper margin. Bristles: 2 pairs of dorso-central, 1 humeral, 1 præsutural, 2 notopleural, 3 supra-alar, 1 fine mesopleural, and 1 sternopleural. Scutellum black, flattened, punctulate as is the mesonotum, bare, with 4 strong bristles, the apical not crossed. Metanotum shining black. Halteres black. Abdomen flattened, entirely shining black, and very short blackhaired. Genitalia very small and black. Legs shining black; middle and hind tibiæ yellow with black tips; middle and hind tarsi yellow; front legs entirely black, the femora reddish beneath; front tarsi distinctly broadened. Wings brownish, almost black along the costal margin to the second vein; veins black, arranged as in *pupicola*.

41. *Pachycerina apicalis* sp. nov.

*Male*.—Very closely related to *P. javana* and *P. seychellensis* Lamb, 1912, but distinguished by the coloration of the wings, which have a brown costal margin and a narrow whitish apical lunule between the ends of second and fourth veins.

Length of body, 2.5 mm.; of antennæ, 0.8 mm. Frons opaque yellow, reddish toward the eyes, with a round opaque black spot on the ocelli, not prolonged forward; frontoörbital bristles inserted on brownish dots; face shining reddish, slightly convex, not prominent, with a round black shining spot on each side; prælabrum reddish; palpi black at the apex; antennæ yellow, the third joint very long, brownish black; arista short plumose, not feathered. Mesonotum shining reddish, almost bare; brown longitudinal stripes very indistinct; a broad yellowish streak extending from propleura along mesopleura to the hypopleura. Thoracic chætotaxy normal; 1 mesopleural and 1 sternopleural bristle. Scutellum, like mesonotum, with 4 bristles, the apical two parallel. Abdomen shining reddish, scarcely pilose; genitalia round, light yellow. Legs entirely yellow; front tarsi black, the first joint with yellow base. Wings with the second longitudinal vein, at the base, very divergent from the third, afterward passing near to the costa; third and fourth veins straight and almost parallel. Wings grayish; the costa brown from the end of the first vein to the end of the second, from whence it continues more diffused, to the hind margin of the

wing, ending below the apex of the fourth vein. The whitish apical lunule is very distinct.

42. *Lauxania* (*Sapromyza*) *lucida* Meij. 1910.

Described from Java. An entirely shining yellow species with a black ocellar dot, and with the acrostichal bristles arranged in 6 series. The third antennal joint is darkened.

43. *Lauxania* (*Sapromyza*) *punctipennis* Meij. 1908.

Described from Java, and distinguished by the pattern of the wings, which is very like that figured by Lamb for his *S. striata*.

44. *Lauxania* (*Sapromyza*) *ornatipennis* Meij. 1910.

Formerly known only from Java, and easily distinguished by the coloration of the wings, antennæ, and legs. The allied *L. lunifera* Meij. has been found in Formosa.

45. *Trigonometopus albiset*a sp. nov.

Allied to *brevicornis* Meij. from Java, and exhibiting also 2 pairs of frontoörbital bristles (*T. monochæta* Hendel has only a single pair), but very distinct in the color pattern of wings and legs.

*Female*.—Length of body, 3.5 mm. Head grayish yellow; frons with a broad brown middle stripe; a black triangular spot between antenna and eye; a vertical brown stripe on each side of the face below; 2 horizontal stripes on the cheeks below the eyes, the superior being broader; antennæ light yellowish, the second joint darkened above, the third not pointed; arista whitish, rather long pubescent. Mesonotum and scutellum yellow, with 4 equidistant brown stripes on the back, the 2 middle ones prolonged on the scutellum; there is also a short brown notopleural stripe; mesopleura dark brown, toward the middle with a yellowish horizontal stripe; sternopleura brown, with the superior border yellow. There are 3 pairs of strong dorsocentral and 2 pair of præscutellar bristles. Halteres whitish. Abdomen yellow, each segment with a brown hind border, which is narrower in the male and broader in the female, the abdomen of the latter becoming almost all brown. Male genitalia rounded, yellow. Legs with the coxæ yellowish white; tibiæ with black apices; middle and hind femora outwardly with a broad oblique black band near the base; tarsi darkened. Wings whitish gray, last portion of the fourth longitudinal vein as long as twice the preceding and without stumps; costal cell hyaline; a brown fore border from the end of the auxiliary vein to the end of the second

vein, reaching below to the second vein; a broad apical brown band, fused with the costal border and reaching the hind margin of the wing; a whitish apical lunule between ends of second and fourth veins; the 2 cross-veins have also broad dark margins, the dark margination of the hind cross-vein forming a preapical band.

46. *Trigonometopus bakeri* sp. nov.

Somewhat allied to the preceding species, showing also 2 pairs of orbital bristles, but well distinguished by the unicolorous yellow legs, long and thin brown arista, and different color pattern of head and wings.

Length of body, 5 mm. Head yellow; frons with a very narrow middle longitudinal brown stripe; a small black spot between antennæ and eyes; face retreating, wholly yellow, without black stripes, the lateral carinæ only being narrowly brown; cheeks with a short black stripe just below the eye. Antennæ short, wholly yellow, the third joint rounded at the apex; arista brown, very long, hair-like, short pubescent. Mesonotum and scutellum as in the preceding species, but with the brown stripes broader, the notopleurals being almost fused with the externals. Halteres with brown knob. Abdomen dark yellow, lighter at the base; segments with a black hind border which is broadened laterally; genitalia small, yellowish; venter pale, bristles black. Legs wholly whitish yellow, without any distinct dark marking; tarsi darkened at apices; front femora like the preceding, with 3 or 4 very long bristles beneath. Wings narrow and long; third and fourth veins parallel; cross-veins less approximate; distal portion of fourth vein once and a half as long as the preceding, without stumps. The brown of the costal margin fills up the costal cell, and, beginning at the base, is dilated to the fourth vein, after the hind cross-vein; there is no hyaline apical lunule; the cross-veins are very narrowly bordered with fuscous.

Genus *LONCHAEA* Fallén.

This collection includes very numerous species of this important genus, partly reared from different kinds of fruits by Professor Baker. None of these species are at all similar to any of those described by Kertész, Meijere, or Lamb. I present here a table separating the species, remarking that all of them agree in the following characters: eyes bare; cheeks narrow; antennæ reaching the epistome; legs entirely black.

Key to species of *Lonchaea*.

*a*<sup>1</sup>. Squamulæ brown, black behind.

*b*<sup>1</sup>. Scutellum on the sides with numerous short bristles; arista long plumose; abdomen black, very shining; length about 5 mm.

*citricola* sp. nov.

*b*<sup>2</sup>. Scutellum having, besides the usual bristles, only a few short bristles near the apex; arista short plumose; abdomen brownish, less shining; length about 3 mm..... *ficiperda* sp. nov.

*a*<sup>2</sup>. Squamulæ white or light yellowish; white haired.

*c*<sup>1</sup>. Males.

*d*<sup>1</sup>. Last abdominal segment twice as long as the preceding, deeply excavate in the middle, terminating in the form of two points, and being long pilose..... *excisa* Kert.

*d*<sup>2</sup>. Last abdominal segment shorter, not excavated, and more or less pilose.

*e*<sup>1</sup>. Last abdominal segment less pilose; hypopygium small, with a prominent yellow penis..... *filifera* sp. nov.

*e*<sup>2</sup>. Last abdominal segment long pilose; hypopygium more developed, but without prominent penis..... *setifera* Meij.

*c*<sup>2</sup>. Females.

*f*<sup>1</sup>. Arista rather long plumose as usual; scutellum with some bristly hairs on the sides and at the apex.

*g*<sup>1</sup>. Scutellum not pollinose, shining black; abdomen brownish; wings hyaline; ovipositor exerted..... *ficiperda* sp. nov.

*g*<sup>2</sup>. Scutellum grayish pollinose; abdomen shining black; ovipositor retracted ..... *filifera* sp. nov.

*f*<sup>2</sup>. Arista very short plumose; scutellum aeneous, not pollinose, with the usual 4 bristles and only a pair of shorter bristly hairs between basal and apical bristles..... *calva* sp. nov.

47. *Lonchaea citricola* sp. nov.

A shining black species, distinguished by the black squamulæ and very bristly scutellum, and by its greater size. It was reared from *Citrus* fruits, together with *Monacrostichus citricola* sp. nov. It seems to be allied to *L. biroi* Kert. and *L. obscuripennis* Meij.

*Male*.—Length of body, 4.5 to 5 mm. Frons opaque velvety black, one-fifth as broad as of the head; face gray pollinose; arista black, yellowish at the base, rather long plumose; third antennal joint broad; lunule black; palpi black and bristly. Mesonotum and scutellum not pollinose, the latter with very numerous bristly hairs on the sides, at least 14 or 15 pairs, 2 or 3 of which are apical. Last abdominal segment short and not specially pilose; hypopygium very small, with the penis not prominent. Wings grayish hyaline, with yellowish veins.

48. *Lonchaea ficiperda* sp. nov.

A small, brownish, less shining species, distinguished by the different coloring of the squamulæ in both sexes. Reared from maggots in fruits of *Ficus megacarpa* Merrill.

*Male and female*.—Length of body, 3 to 3.2 mm.; of the exerted ovipositor, 1.3 mm. Face and frons as in *L. citricola*, the frons of the female twice as broad as that of the male. Third antennal joint narrow; arista black, shorter plumose. Scutellum not pollinose, with 3 or 4 pairs of lateral bristly hairs, 2 or 3 on the sides and 1 on the apex. Halteres black. Abdomen of the male with the last segment short and not especially pilose; hypopygium small, with penis not distinct. Wings hyaline.

49. *Lonchaea excisa* Kertész, 1901.

A shining black species, well distinguished by the shape and pilosity of the last abdominal segment of the male, as figured by Meijere. *L. plumata* Lamb, 1912, from the Seychelles seems to be a very closely allied species, if not the same. The pollinose scutellum bears 3 or 4 pairs of small bristles, 1 pair being apical.

50. *Lonchaea filifera* sp. nov.

A shining black species, with white squamulæ in both sexes, distinguished by the prominent yellow penis of the male.

*Male and female*.—Length of body, 3.5 mm. Frons of male rather broad, one-fourth of the width of the head, somewhat shining sericeous; antennæ slightly brownish at the base, the third joint gray, arista rather long pilose. Mesonotum posteriorly and scutellum pollinose, the latter with 3 or 4 pairs of small bristles, 1 pair being apical. Last abdominal segment of male once and a half the length of the preceding, not setose; hypopygium very small; penis prominent, in the shape of a thin pale yellow hair, longer than the usually black surrounding hairs; of the female ovipositor only the point is visible. Wings hyaline or slightly infuscated.

51. *Lonchaea setifera* Meijere, 1910.

A shining black species, closely allied to the preceding, but distinct by the last abdominal segment, as figured by Meijere. Scutellum the same as in the preceding.

52. *Lonchaea calva* sp. nov.

Shining æneous on mesonotum and scutellum, black on the abdomen. Very distinct from any other species in the short pilose arista and the bare scutellum.

*Female*.—Length of body, 3 mm.; of ovipositor, 1 mm. Frons

as broad as one-fourth the width of the head; arista black, very short pilose. Scutellum small, with only a pair of lateral small bristly hairs. Halteres black. Ovipositor exerted. Wings hyaline.

53. *Plagiostenoptera aenea* Wied. 1830.

A common species in the Oriental Region. Known also from Formosa.

54. *Plagiostenoptera calcarata* Macq. 1843.

Well distinguished by its beautiful shining blue coloring and by the strong trochanteral spine of the male.

55. *Plagiostenoptera trivittata* Walk. 1869.

Distinguished by the color pattern of the thorax; the same as *P. zonalis* Rondani, from Borneo. Walker placed it originally in *Dacus*.

56. *Elassogaster sepsoides* Walk. 1861.

Described from Amboina and Batchian, and as *E. unimaculatus* Kert. from New Guinea. Found also in Formosa. Its similarity to *Sepsis viduata* Thoms. is very striking.

57. *Rivellia basilaris* Wied. 1830.

Described originally from Sumatra, and recently recorded from Formosa.

58. *Rivellia fusca* Thoms. 1869.

An endemic species.

59. *Gorgopsis cristiventris* Gerst. 1860.

A very peculiar species, described originally from Amboina.

60. *Naupoda platessa* O. S. 1882.

A very interesting endemic species.

61. *Chrysomya aenea* Fabr. 1794.

A common species in the Orient. Known also from Formosa.

62. *Chætodacus caudatus* Fabr. 1805.

Common in the Oriental Region. A specimen in this collection agrees with the description of the var. *nubilus* Hendel, from Formosa, having the posterior cross-vein only shaded below, but it has the brown spot at the apex of the femur.

63. *Chætodacus cucurbitæ* Coq. 1899.

The present material agrees with my specimens from India. The allied *synnephes* Hendel, from Formosa, has four scutellar bristles.

64. *Chætodacus ferrugineus* Fabr. var. *pedestris* nov.

Mesonotum, pleuræ, and metanotum intensely black, with the typical yellow streaks and spots; the brown spots on the frons very well marked, including a central large round dot. Tibiæ dark brown, the posterior ones black; all the femora with a broad black ring before the apex most strongly developed on the fore pair, on the middle and hind pairs distinct at least on the under-side. Costal border of the wings broader and darker.

Length of body, 6 to 8 mm.

This form of the variable species is closely allied to *C. dorsalis* Hendel from Formosa (which may be a form of *C. ferrugineus*), but is at once distinguished by the color of the legs. The typical Indian form has the legs more yellow; var. *obscuratus* Meij. has no yellow lateral stripes on the dorsum; *C. cilifer* Hendel has the yellow lines, but shows a wholly black abdomen.

Genus *MONACROSTICHUS* novum

According to my paper on Indian trypaneids, true species of *Dacus* are wanting in the Oriental Region, where are to be found only species of *Bactrocera* and *Chaetodacus*. Professor Baker has, however, sent to me what is in certain characters a true *Dacus*, but it has no anterior supra-alar and no præscutellar bristles. This form shows, however, so many other unique peculiarities, that I think it better to erect for it a new genus, the type of which might perhaps be considered *Dacus longicornis* of Wiedemann (not of Guérin-Méneville which is a *Bactrocera*), although it is certainly well represented by the new species *M. citricola*. It may be characterized as follows:

Like *Chætodacus*, but without anterior supra-alar and præscutellar bristles; antennæ very long and geniculate; abdomen conspicuously constricted about the base, club-shaped as in *Conops*; front femora with some spines beneath near the apex; second abscissa of the fourth longitudinal vein very sinuose before the small cross-vein, the discoidal cell being therefore very distinctly narrowed near the base.

A particular feature of this genus (or at least of the species described below), and which I have never before noted in any trypaneid known to me, is the presence of a single but rather strong, acrostichal bristle placed on the middle line before the suture, and therefore not paired. Of 5 specimens examined, 3 do not have this peculiar bristle, 1 has it on the suture, and 1 before the suture.

The type of the genus is *Monacrostichus citricola* sp. nov.

The genera of true Dacinæ known from the Oriental Region can be distinguished as follows:

*Key to the genera of Dacinæ of the Oriental Region.*

- a*<sup>1</sup>. Femora not spinose beneath; anterior scutellar and præscutellar bristles present.
- b*<sup>1</sup>. Wings banded..... *Bactrocera* G.-M.
- b*<sup>2</sup>. Wings not banded..... *Chætodacus* Bezzi.
- a*<sup>2</sup>. Femora spinose, at least those of the first pair.
- c*<sup>1</sup>. Anal cell drawn out in a long point; second basal cell dilated; arista bare; abdomen club-shaped.
- d*<sup>1</sup>. The first 2 joints of the antennæ united in a single joint, forming a unique peduncle..... *Callantra* Walk.
- d*<sup>2</sup>. The first 2 joints of the antennæ wholly separated.  
*Monacrostichus* gen. nov.
- c*<sup>2</sup>. Point of the anal cell very short; second basal cell not dilated; arista short plumose; abdomen cylindrical; all the femora spinose.
- e*<sup>1</sup>. Antennæ much longer than the face..... *Meracanthomyia* Hendel.
- e*<sup>2</sup>. Antennæ shorter than the face..... *Adrama* Walk.

*Key to the presumptive species of Monacrostichus.*

- a*<sup>1</sup>. Wings cinereous, tawny along the costa and along the veins, blackish toward the apex; face with a broad triangular black spot in the middle; mesonotum tawny with a black dot on each side of the fore border; length "8 lines;" (Waigoe.) (This species is perhaps a *Xenaspis*)..... *sepedonoides* Walk.
- a*<sup>2</sup>. Wings grayish hyaline, with a brown streak along the costal border; length 8-9 mm.
- b*<sup>1</sup>. Dark costal margin of wings extending to the fourth vein; anal cell with a brown streak; face with an elongated black mark on each side; femora broadly blackish brown. (Gosford, N. S. W.).  
*aequalis* Coq.
- b*<sup>2</sup>. Brown costal border not reaching the fourth vein; anal streak wanting.
- c*<sup>1</sup>. Face with a black oral border; brown border of wings passing the third vein; femora yellowish or blackish.
- d*<sup>1</sup>. Palpi yellow; face with a black dot on each side; yellow spot on sternopleura small; femora yellowish (Java).  
*longicornis* Wied. (*vespoides* D.)
- d*<sup>2</sup>. Palpi black; face broadly black below; spot on sternopleura broad; femora blackish, somewhat yellow at both ends (Java).  
*conopsoides* Meij.
- c*<sup>2</sup>. Face in the middle with a transverse black band united with the black antennal cavities; this band is dilated below toward the middle and prolonged to the mouth; dark yellowish costal area of wings hardly passing the third vein; femora yellow, with a broad black streak below; palpi yellow..... *citricola* sp. nov.

65. *Monacrostichus citricola* sp. nov.

A very distinct waspish-looking fly, which seems to be allied to *longicornis*, but is easily distinguished from that and its allies by the peculiar color pattern of the face. Professor Baker

has reared this from *Citrus* fruit, at Los Baños, P. I., together with *Lonchaea citricola* sp. nov.

*Male and female*.—Length of body, 9–10 mm.; of wing, 8–9 mm.; of the antennæ, 3 mm.; of the ovipositor, 1.5–3 mm. Head as described by Meijere for his *conopsoides*; frons without lateral spots, but with a large rounded middle spot; the peculiar black middle band of the face with the yellow portion over it prominent in the form of a broad tubercle; the palpi are sometimes infuscated, brownish; third antennal joint black; arista dark reddish; there is only the basal pair of frontoörbital bristles. Mesonotum blackish brown, with 2 approximate broad longitudinal gray bands; the median triangular yellow spot behind the suture is well developed; pleural yellow stripe ending on the middle of the sternopleura; metanotum black, yellow laterally, this yellow uniting with the yellow hypopleural spot. Scutellum yellow, narrowly black at the base, with a pair of weak apical bristles. Pteropleural bristle distinct, but not very strong. First abdominal segment black; second black with a narrow yellow hind border, and a broad yellow median band interrupted centrally by a black line; other segments reddish yellow, with golden pubescence, and a broad black band on anterior half; third segment of the male not ciliated; ovipositor short, flattened, reddish with brownish base. Legs yellowish red, all the femora below with a broad black longitudinal band; hind tibiæ brown; first joint of all the tarsi whitish. Front femora with 3 or 4 black spines near the apex. The dark yellowish costal area of wings extends caudad to fourth vein as far as the origin of basal cross-vein, after which it extends little caudad of the third; anal cell hyaline, its point very long and acute, the stump of the sixth vein very short.

66. *Enicoptera proditrix* O. S., 1882.

A very fine species, which on account of its complete chætotaxy cannot be placed among the *Dacinæ*, which it resembles only in the want of the sternopleural bristles. Enderlein has recently recorded this species from Sumatra.

67. *Gastrozona capillata* sp. nov.

This and the following species can be placed in my genus *Gastrozona* on account of the form of the antennæ, want of ocellar bristles, and color pattern of the wings; but they differ from the typical species in having very numerous (6 or 7) lower frontoörbital bristles.

*Female*.—Length of body, 6 mm.; of ovipositor, 1.5 mm.

Head whitish; frons yellow; a black spot on the middle of the occiput; all the bristles black, the genal bristles rather strong; no distinct ocellar bristles; the 6 pairs of lower frontoöorbitals are bent inward; antennæ yellow, not reaching the epistome, the third joint rounded at the apex; arista long but thinly plumose; palpi yellow, short pilose, very much dilated. Mesonotum shining black; the humeri and a broad oblique band crossing the metapleura and reaching the pteropleura are whitish; hypopleura and sides of metanotum also whitish; chætotaxy complete, nearly all the bristles black, only the 2 or 3 mesopleural ones yellow. Scutellum wholly white, with 4 black bristles and some yellow hairs on the middle. Squamulæ grayish; halteres whitish. Abdomen shining black, with black pile and bristles at end; first segment yellow with yellow pile; a quadrate yellow spot toward the middle of the penultimate segment; ovipositor flattened, shining black. Venter yellow. Legs with coxæ and tarsi entirely pale yellow; all the bristles yellow; middle tibiæ with a single black spur; row of hairs on the hind tibiæ short but strong. Wings with the third vein bristly to the end; small cross-vein a little before the middle of the discal cell. Wing pattern brown, very similar to those of Plate VIII, figs. 17 and 18, of my paper on Indian trypaneids; but the brown costal area is entire, not interrupted after the stigma, which is wholly black, showing only a small hyaline spot before the base and another beyond the apex; the subapical cross band is united with the costal band; the band on the hind cross-vein is prolonged obliquely to the anal vein, forming a band almost parallel to the hind margin.

68. *Gastrozona luteiseta* sp. nov.

A yellow species with black and white markings, allied to the preceding, but distinguished by a different wing pattern, and entirely yellow bristles, only the dorsocentrals being black.

*Male*.—Length of body, 6 mm. Head and its appendages as in the preceding, but all of the bristles, including those of the occipital row, yellow; no ocellar bristles. Mesonotum yellow with yellow pile; the white pleural markings as in the preceding species; a spot over the humeri and the hind border of the back along the base of the scutellum, black; a spot on the hypopleura and metanotum black; chætotaxy normal, the bristles yellow, only the two dorsocentrals black. Scutellum whitish, yellow on the sides above, with 4 yellow bristles, and numerous and long yellow hairs on the middle. Squamulæ and halteres white. Abdomen wholly yellow, shining; there are on the middle 2

parallel, longitudinal black stripes, from the second to the fourth segment; sides of last segment black beneath; genitalia yellow; hairs yellow, but some black bristles on last segment. Legs entirely as in the preceding. Wings with a similar pattern, but the costal area is yellow, not brown, and distinct from the costa, the costal cell with the stigma being hyaline; the gray band on the hind cross-vein is isolated and narrow; there is a small gray spot toward the middle of the anal vein; the apical and sub-apical bands are gray, not brown.

69. *Acanthoneura maculipennis* Westw.

This characteristic and not rare species is represented by a male.

70. *Ptilona brevicornis* Wulp.

Our specimens represent the typical form, very distinct by reason of its reduced chætotaxy. I have seen it also from Formosa.

71. *Rioxa caeca* sp. nov.

Very near the female of *lanceolata* (as described by Enderlein), but distinguished by the want of the apical hyaline spot of the wings.

*Female*.—Length of body, 9 mm.; of ovipositor, 2.5 mm. Head with its appendages yellow; all the bristles black; orbital bristles 2 and 3, the first very small. Mesonotum and pleuræ light yellow, dark brownish on the back but without distinct color pattern; chætotaxy complete. The middle pair of lateral bristles on the scutellum only a little weaker than the others. Halteres yellow with brownish knob. Abdomen shining black, the basal yellowish middle stripe very narrow, less distinct, not surpassing the third segment. Legs with the tarsi entirely pale yellowish. Wings with the characteristic black foremargin of *R. lanceolata*, without any hyaline spot on the stigma and without any hyaline indentation; there are only 2 very small hyaline discal dots, one near the base of the first posterior cell, the other near the apex of the discal cell; 2 larger dots are to be seen in the second posterior cell at the hind margin; a dot on the apex of the third posterior cell, which is hyaline in its greater part as is also the axillary cell. There is also a yellowish, less distinct, spot just over the small cross-vein; the hyaline apical spot between the ends of third and fourth veins is wholly wanting. The second longitudinal vein is a little wavy, but not so much so as in *Acanthoneura*.

Genus **SPILOCOSMIA** novum

It is necessary to erect this new genus for a species in this collection which shows a striking coloring of the body, combined with a pointed third antennal joint, and want of ocellar bristles. Head broad; eyes rounded; third antennal joint not reaching the epistome, and with its external angle very pointed; arista plumose; orbital bristles, 2.2 mm.; occipital row with thin, black bristles; genal bristle strong. Palpi rather narrow, bristly. Thoracic chaetotaxy complete; a very strong pteropleural; 2 mesopleurals. Scutellum with 4 bristles. Abdomen bristly at the end. Front femora with a row of bristles beneath; middle tibiae with 2 spurs; hind tibiae with a row of strong hairs. Wings broad, with a strong costal bristle; stigma short; second vein straight; third vein bristly over its whole length; a small cross vein after the middle of the discal cell; anal cell drawn out in a long point. Body yellow with black spots. Wings with yellow and brown cross bands, without basal streaks.

Type: *Spilocosmia bakeri* sp. nov.

This genus seems to be allied to the Bornean *Chelyophora* Rondani.

72. *Spilocosmia bakeri* sp. nov.

A yellow species, with 12 black spots on the body and with 1 yellow and 2 brown bands on the wings.

*Male*.—Length of body, 8 mm. Head pale yellow; frons darkened in the middle above the antennae; there is also a very small black ocellar dot; a rounded black spot occurs on the face toward the middle of the epistome; antennae yellow; palpi yellow, with black bristles. Mesonotum and scutellum entirely shining yellow; the rounded black spots are as follows: One on the humeral callus, 1 on each side of the median dorsal suture, at the second notopleural bristle, 1 at the inner supra-alar bristle (the largest of all), and 1 on the end of the scutellum. All the bristles are black. Squamulae and halteres yellow. Abdomen elongate, entirely shining yellow, black pilose; last segment with a black spot on each side. Genitalia black. Venter yellow, with a marginal black line from second to fifth segment. Legs entirely yellow, black setose. Wings with yellow veins; stigma yellow; from it arises a yellow band which passes over the basal cross-veins to the anal cell; the 3 brown bands are narrow; the first band begins near the middle of the costa between the ends of the first and second veins, and passes obliquely over the small cross-vein to the hind margin, reaching it at the end of the anal

vein; the second begins a little before the end of the second vein, and, passing over the hind cross-vein, ends (where it is dilated) at the hind margin near the middle of the third posterior cell; the third band has the shape of an apical arch, which extends from the end of the second vein to the end of the fifth; this last band is broader than the others, but is interrupted toward the middle by an oblique hyaline streak, which ends at the apex of the fourth vein.

73. *Spheniscomyia sexmaculata* Macq. 1843.

A widely spread species, the distribution of which is from South Africa to the Philippines and Formosa.

74. *Rhabdochaeta bakeri* sp. nov.

Nearly allied to the type species of the genus (*R. pulchella* Meij. from Java), but distinguished by the scutellar bristles and wing pattern.

*Male and female*.—Length of body, 2.5 mm. Head and its appendages as in *R. pulchella*; third antennal joint very decidedly pointed; palpi feathered; frontoörbital bristle dilated. Thorax as in *R. pulchella*; scutellum with 6 dorsal bristles; there is a pair of smaller white bristles before the basal pair, which are longer and darker; the apical pair is crossed, and under this is to be seen another pair of smaller bristles, which are also crossed. Ovipositor short and truncate, and of a shining reddish color. Middle and hind femora with a single dark ring (the apical), which is mostly indistinct. Pattern of wings very much like that of *R. pulchella*, but around the blackish spot placed just above the hind cross-vein there are 3 reddish brown spots disposed in a triangle; the largest spot is in the discal cell, just below the small cross-vein. The coloring of the spots is very much like that of the similar spots in *Schistopterum moebii* Beck.

75. *Oxyna parca* Bezzi. 1912.

The present specimens are identical with those from India.

76. *Oxyna sororcula* Wied. 1830.

Agrees with my Canarian specimens.

77. *Trypanea amoena* Frauenf. var.

Some of our specimens agree with those from India, but differ in the want of the superior part of the brown streak issuing from the stigma and in the lack of the brown spot on the fifth vein.

78. *Diopsis subnotata* Westw. 1848.

A characteristic species, very distinct by its great size.

79. *Teleopsis belzebuth* Big. 1874.

The specimens from Formosa, referred to this common Philippine species by Hendel, seem to belong to some other species.

80. *Sepsis viduata* Thoms. 1869.

A very distinct dark species, previously known only from China.

81. *Sepsis spectabilis* Meij. 1906.

Previously known from Singapore and New Guinea.

82. *Taeniptera galbula* O. S. 1882.

This fine Philippine species has recently been found also in Formosa.

83. *Eurybata semilauta* O. S. 1882.

An endemic species, very distinct in the peculiar wing pattern.

84. *Telostylus maccus* O. S. 1882.

The present specimens differ from the type by the want of the black spots on sternopleura and on hypopleura; the propleural spot is, on the contrary, very broad. This variability shows, perhaps, that *T. maccus* is only a form of the typical species *T. binotatus* Bigot; the allied *T. decemnotatus* Hendel from Formosa is possibly, also, only an extreme form.

85. *Telostylus niger* sp. nov.

Very near *T. maccus* in all plastic characters, but distinguished by the general black coloring, by reason of which it seems to be allied to the recently described neotropical *T. vittatus* Cressen.<sup>21</sup>

*Female*.—Length of body, 5.5 mm.; of antennæ, 2 mm.; of ovipositor, 1.3 mm. Head black; frons velvety black with a red spot above the antennæ; face red, with a velvety black spot on the cheeks; a pair of orbital bristles, 2 pairs of verticals, and a pair of crossed postverticals; antennæ red, the third joint a little infuscated near the tip; arista longer than remainder of the antennæ, white and short white pilose. Thorax brownish black on the dorsum, shining black on the pleuræ; on each side of the suture there is a dark reddish triangular spot, and above the root of the wings a broad velvety black one. Scutellum black, with 4 bristles, the basal pair very small. Halteres pale yellow. Abdomen shining black, short black haired; ovipositor with red tip. Legs reddish yellow, hind coxæ, tarsi, and fore tibiæ black; femora with a narrow black ring on the last third;

<sup>21</sup> *Ent. News* (1912), 23, 390.

middle and hind tibiæ darkened. Wings as in *T. maccus*, but the apical third infuscated; there is also an infuscation on the fourth vein between the cross-veins.

86. *Gymnonerius fuscus* Wied. 1824.

Known also from Formosa through Hendel.

87. *Megamerina annulifera* Big. 1886.

A very distinct species, originally described from Celebes, and well placed in this genus by its author. The frons bears a distinct frontoörbital bristle.

88. *Gobrya bacchoides* Walk. 1860.

I think that Walker is in error in describing the arista of this species as pubescent; in the specimens before me it is very clearly plumose as described and figured by Meijere for his Javan *G. simulans*. This last, however, has a shining black abdomen, while in *G. bacchoides* there are 2 yellow bands, 1 narrower at the end of the second segment and 1 broader at the end of the third. The position of this strange insect among the Tylinæ is very doubtful; it has also but a superficial likeness to the Psilinæ; it is probably better to place it in a special sub-family Megamerininæ with some other genera, such as *Toxara*, *Syringogaster*, and *Syritomyia*.

89. *Chyliza elegans* Hendel. 1913.

We have a female specimen of this species which was only recently described from Formosa. It differs from *C. selecta* in having the 2 basal joints of antennæ deep black, the legs entirely yellow, and the frons black toward the middle.

90. *Metopostigma sauteri* Beck. 1911.

This species is described as being common in Formosa. Our specimens agree very well with the description, but the frons shows in its anterior part an oblique brown spot on each side, of which Becker says nothing.

91. *Chlorops ochracea* Beck. 1911.

Originally described from Java, and easily distinguished by the black antennæ and the wholly yellow pleuræ and legs.

92. *Chromatopterum elegans* sp. nov.

This pretty species seems to be more nearly allied to the Ethiopian *C. delicatum* than to the Australian *C. pubescens*.

*Female*.—Length of body, 2.5 mm. Head whitish yellow; occiput entirely shining black; frontal triangle of greater size,

shining black and smooth, convex, reaching the base of the antennæ, where it is rounded and not pointed, and allows only a narrow streak of the yellow color on each side; antennæ short, dark yellow, the third joint almost rounded and brownish; arista brown, microscopically pubescent. Thorax shining black, but there are on the mesonotum before the suture 2 pale yellow parallel streaks, which thus give it the appearance of having 3 united black stripes; pleuræ shining brown, with a broad whitish stripe in the notopleural region, which reaches the middle of the mesopleura. Scutellum shining black, pale yellow toward the middle above; 2 very strong apical bristles. Halteres pure white. Abdomen shining black, pale yellow on the venter. Legs with the coxæ yellow; last tarsal joint blackish; hind femora darkened on the last half. Wings as figured by Becker<sup>25</sup> but the black fore border not surpassing the second vein at the base; apical brown spot surpassing the third vein and reaching the middle between the end of the third and fourth veins.

93. *Gaurax nigricornis* Beck. 1911.

Our specimens agree very well with the description in the coloring of the antennæ, legs, and wings; but the scutellum is entirely black above, being also as coarsely punctate as the mesonotum, and only below reddish or yellowish; the brown fore border of the wings covers almost all of the third vein.

94. *Gaurax dimorphus* O. S. 1882.

A female specimen is before me which I take to be the female of Osten Sacken's male, while the female of Osten Sacken's species belongs probably to some other species. This was not known to Becker. From Osten Sacken's description of the male there are the following differences: the basal joints of antennæ are black; the face and palpi are black; the first abdominal segment and the middle of the second are pale yellow; all the coxæ are yellow; middle femora narrowly black near the base; hind tibiæ broadly black toward the middle; hind femora wholly yellow.

95. *Pseudeurina maculata* Meij. 1904.

A very distinct species previously known only from Java.

96. *Notiphila sternalis* Thoms. 1869.

An endemic species and a true *Notiphila*.

<sup>25</sup> *Ann. Mus. nat. Hung.* (1910), Pl. 13, fig. 10.

97. *Paralimna nitens* sp. nov.

Near *P. javana* Wulp., but distinguished by the color of the head and of the thorax; *P. chinensis* Wied. seems to be another allied species, while *P. sinensis* Schiner is very different.

*Male and female.*—Length of body, 3.5 mm. Head black, shining on the occiput; face, cheeks, and prælabrum light gray; frons dull, shining along a middle broad longitudinal stripe, with 2 small white dots on each side near the eyes, velvety black in front; cheeks velvety black above, with a white spot; antennæ short, black, the second joint with a white spot above; arista with 9 or 10 rays; palpi and proboscis black. Thorax on the pleuræ of as light a gray color as that of the face, shining black on the dorsum, dark gray on the sides and along the suture. Scutellum gray on the basal half, dull black on the apical. Halteres yellowish. Abdomen dull black and black pilose; second segment almost entirely whitish gray; third, fourth, and fifth with a broad apical band of the same color, which is broadly interrupted in the middle. Legs black, gray pollinose, the first joint of the front tarsi and the first 2 joints of the others are yellow. Wings grayish hyaline, with yellowish veins.

98. *Discomyza maculipennis* Wied. 1830.

Widely spread over the Australian and Oriental Regions. *D. obscurata* Walk. is very probably the same species.

99. *Ochthera innotata* Walk. 1860.

Our specimens agree with this species in the entirely black legs. Originally described from Macassar and Ceram. The front is shining black, showing only a narrow yellowish streak on each side near the eye. Antennæ very short; arista with 3 rays. Thorax and scutellum coarsely punctate, with bluish reflections toward the middle. Abdomen with grayish spots on the sides of the segments, only those of the last segment being visible from above and forming an interrupted cross band. Middle tarsi sometimes yellowish. Scutellum with 2 distinct but small apical tubercles; no apical bristles (perhaps broken in these specimens).

100. *Chalcidomyia apicalis* Meij. 1911.

This Javanese species is very distinct. The antennæ, which were broken in the specimen described by Meijere, are, in our specimens, of the same shape as in the other species. The sternopleura has no yellow spot on the upper hind corner.